COMMENTS to the House Ways and Means Committee, Energy Tax Reform Working Group

I want to thank you for this opportunity to provide comments regarding Comprehensive Energy Tax Reform. I wish to make the House Ways and Means Committee, Energy Tax Reform Working Group aware that I can not support the Production Tax Credit for the wind industry because of their slaughter to protected species.

My experience with the wind industry is that nothing is as it seems and every statement has to be scrutinized. In addition no one should ever ignore the fact that taking billions and billions in profits off the taxpayer's backs is a clear motive to be dishonest.

I have been researching the wind industry's reported bird and mortality for years. I have found it to be a complete fraud with methodology rigged to find as little mortality as possible. I have enclosed an image it an image of a large wind turbine. I submitted this image because it serves a classic example of the deception used by the wind industry when reporting mortality.

The huge turbines used by the industry throw carcasses great distances yet in the mortality study for this turbine researchers only looked for and reported carcasses from the small gravel/cleared around the turbine. As one can see from the image they only looked about 45 feet away on the front side of this huge turbine when a proper search area around this turbine would have been at least 150-175 meters. The FWS is aware of and condoned this deceptive study.

The new huge wind turbines like the one in the image provided catapult carcasses much further from towers than the older much smaller turbines. The blades are 50 meters long or even longer. Tip speed is not only 50-75 mph faster on these turbines but the blades are sitting in much higher winds in the 100-135 meter wind zone. Any wind resource map will show much higher winds at 100 meters or above. In these higher wind zones the stronger winds will also carry birds smashed by turbine blades further.

Missing carcasses in searches was the reason that a 2004 wind mortality report from Altamont Pass suggested mortality search areas or the search radius from towers needed to be expanded in relation to the size of the turbines being surveyed. A minimum of 70 meters was suggested, for even the shortest of turbines currently in operation.

No one should ever be misled about what the industry is doing because hiding carcasses and reported mortality is the reason for the industry's small 50 meter search areas under their huge turbines. Even turbines at Altamont Pass that are 40-45 times smaller (40-65 Kw) than the large 2.5 MW turbines had search areas of a 50 meter radius. Now the industry is using search areas even smaller than a 50 meter radius on some of these behemoths. It is deliberate deception on the part of the industry and with the approval of the FWS.
Besides using the grossly undersized search areas, the industry also uses fatality

estimating formulas that are meaningless, especially when you know what I know. I have found that there are many ways to rig the numbers put into these formulas. From what I have read in mortality studies these inputs are routinely being manipulated so that wind turbine mortality can be hidden.

I have the hard data showing that well over 200 whooping cranes (juvenile and adults) have perished from the population since 2006. For the last two years the FWS has stopped giving out accurate population counts and they are helping to hide the truth about a rapidly declining endangered species. Now the FWS has stepped in to keep us guessing by claiming that between 178 and 362 are still alive.

In a few hours with a pilot and a small plane, I could come up with a far more accurate figure then the FWS whooping crane count. The truth is that any competent and honest biologist could do the same.

The several hundred whooping cranes that should have been recruited into the population (minus some modest mortality) represent a dramatic increase in mortality rate. These cranes disappeared after thousands of wind turbines were installed along their Central Flyway migration route. The FWS 2013 count should be and would have been well over 400 at 425-435.

The FWS with their voluntary regulations has also helped the wind industry hide golden eagle mortality from their turbines in Texas. Texas is much larger than California and had a much higher population of golden eagles, yet I can not find one report of a wind turbine fatality. They have the same deadly propeller style wind turbines as in California but in fact have many more. In California wind farms (not just Altamont) have killed thousands of these eagles and in Texas all of this mortality that has taken place has been hidden.

These same wind turbines have also destroyed the historical habitat for the California condor. If it were not for the feeding stations keeping them from the turbines the condor population would now be extinct except for in captivity.

This is exactly where the free flying whooping cranes are headed.

The FWS Bald and Golden Eagle Conservation plan is a disgrace. It should be called the eagle extermination plan because it is nothing but a legal shell game which allows the wind industry to legally kill bald and golden eagles. The "no net loss" criteria is actually being used by the FWS as an excuse to hand out "take" permits. Wind farms can now get take permits to kill bald eagles if it fits into the FWS's criteria of "no net loss" to the population.

Here is how the FWS and Wind industry are playing the "no net loss" game. First bogus population surveys or estimates are conducted by shill biologists. Then the population is estimated many times over. From these bogus numbers mortality thresholds are determined. Then the FWS comes in and says something like this....we expect the project to kill only 10-20 eagles a year. This is such a low percentage (within allowable calculated take thresholds) that the overall population will not be affected by the few eagles killed. They totally ignore that the local populations of eagles will be slaughtered off by the wind turbines and lump or diminish their deaths into an imaginary population figure that covers a vast region.

In the 1990's golden eagles began disappearing after the wind energy boom in Europe. These eagles had to migrate in the winter months to survive where they were met with an onslaught of turbines that had been constructed in their winter habitat.

The industry knew all about it because they were finding the bodies. In an effort to hide the genocide the EU LIFE Environment Program which is backed by European financial institutions and the wind industry, paid for a 2008 study called "Territory occupancy and breeding success of the Golden Eagle (Aquila chrysaetos) around tourist destinations in northern Finland". If you can find this study, copy it, read it and show your friends. Show them what now passes as science in this world because it is one of the worst studies ever produced.

According to this study, an increase in tourism (snowmobiles and skiers) were the likely cause for the golden eagle habitat abandonment in Finland. What is amazing (or disgusting) about the study is that no direct evidence was ever provided. But it would have been so easy to get with a couple of fly-overs. In other words no footprints, ski trails, or snowmobile tracks were ever shown to be near any active or abandoned nests. The eagles begin nesting in March and a blanket of snow stays on the ground into May. Ariel photos and observations of human activity would have been critical to this study. Yet none were provided.

In fact meaningful or honest studies relating to the wind industry are nearly impossible to find.

Hiding the Slaughter

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In 1984 the California Energy Commission made the following statement in their Wind Energy Program Progress Report., "The development of wind energy in California has been very rapid, and the foundations for a significant **new domestic energy industry** are in place. As should be expected however, with any fast growing industry using a new technology, there are many institutional, engineering**, environmental**, and economic issues **which must be resolved before the industry is secure and it growth assured."**

Though it was not clearly stated, the primary environmental issue the California Energy Commission was speaking about was the extreme hazard that wind turbines posed to raptors. With over 4700 wind turbines installed by 1984, the industry was already experiencing a horrendous number of raptors being killed by turbine blade strikes. This mortality issue, even though the California Energy commission said it must be resolved,

has never resolved. Instead these impacts have been covered up, so this industry could market this killer to America.

Raptor mortality was one of two primary obstacles for this industry, the other was environmental law. At the time killing rare protected species was a crime at both the state and federal level. So with the help of government agencies, the industry went to work stripping and changing environmental laws so their industry would be appear to be compliant. This process took over 25 years and it to this day is still going on with laws pertaining to the killing of bald eagles and whooping cranes by wind turbines. But despite how any of these laws currently read, there is nothing about the killing of rare species by turbines that is "incidental." The industry is completely aware of the dangers from their turbines, and every move they make is highly calculated, including their hidden slaughter.

Since the early 1980's, the industry has known that there was no way to ever make their propeller style wind turbine design safe for raptors. With the exposed blades tip spinning in open space at 200 mph, it was impossible.

The industry has also known for decades that they were sitting on a public relations nightmare. Images of eagles and hawks cut in half or wandering around wind farms for days with limbs missing would not set well with people. But it does happen and it happens often. To hide this unsettling truth, strict wind farm operating guidelines were established long ago. Some of these guidelines were to maintain high security at wind farms, require strict gag orders from lease holders and employees, and to avoid meaningful studies. For the industry this business plan has succeeded quite well in keeping a lid on their mortality problem.

While the public has some understanding that birds are killed by wind turbines, they haven't a clue about the "numbers". I happen to have a good idea because of my extensive wildlife background and the research I've done relating to this industry. I can not give precise numbers without conducting my own studies, but I certainly understand enough to say with complete certainty that the vast majority of mortalities caused by wind turbines are not being reported. For me this is especially disturbing because the cumulative damage of killing thousands of raptors and rare species a year from limited populations will eventually have disastrous consequences. Some of these consequences have already begun to show up with the declining whooping crane population and the golden eagles living in the regions around Altamont pass and in Southern Ca.

It is also can be seen from the mortality lists compiled at Altamont that this wind farm operates with a huge negative environmental footprint. More than 75 species including some that travel for thousands of miles, are being killed by the Altamont turbines.

To fully grasp what has taken place one needs to look back at a report from the Altamont Pass Wind Resource Area (APWRA) that was published in 2004. The study (Developing Methods To Reduce Bird Mortality In The Altamont Pass Wind Resource Area) lasted for 5 years 1998-2003 and despite wind industry interference, was actually a very fine

effort. But it did have some flaws. One of the primary flaws was that search intervals when looking for fatalities under turbines, were much too far apart. At 30 days or more searchers were missing a high percentage of the carcasses to scavengers. Smaller bird species and bats were especially absent from the lists compiled from mortality searches around turbines. This study tried to compensate for the unknown number of causalities with statistical adjustments taken from scavenger studies, searcher efficiency, and other factors for carcasses removal. The report even suggested that there were errors (on the low side) in mortality estimates due to human causes.

The WRRS (Wildlife Reporting Response System) happens to be one of the human influences around wind turbines. The WRRS is the power companies' own fatality reporting system which allows wind farm personnel to collect carcasses. The industry has had similar carcass collecting programs in place since the late 1980's. The report had mentioned that the WRRS had not reported an eagle carcass removed, one raptor was found by searchers buried under a rock pile, and another raptor was found stuffed in a ground squirrel tunnel. These were obviously human caused influences impacting data.

This study also documented that food sources for raptors, turbine sizes, and turbine placement had a direct bearing on raptor mortality. As a result many of the most dangerous turbines or groups of turbines, with a history of killing golden eagles, kestrels, burrowing owls, and red-tailed hawks were indentified.

The study even noted higher mortality to raptors in response to some of the larger turbines being installed on the same size towers with proportionally longer blades. It was said that wind turbines with intermediate to larger windows of opportunity to fly through the rotor plane associated with a significantly larger proportion of fatalities of golden eagle, red-tailed hawk, American kestrel, burrowing owl, mallard, horned lark, and western meadowlarks. It was also reported that larger rotor diameters were associated with disproportionately more fatalities of red-tailed hawks, all hawks, and all raptors.

At the time this was a very important because the industry was moving away from the smaller turbines and installing much larger turbines. Some were up to 362Kw and had blades twice as long as the 65-100Kw turbines. It was noted that these were turbines with slower rotations per minute that had the "greater windows of time" that would fool birds with the illusion of having open flight areas between the rotating blades. This was an illusion that not only fooled the birds, but to this day continues to fool people. The newest turbines at 20 rotations appear to be slow, but their blades tips can be moving much faster than with smaller turbines at over 200 mph.

The study found that use of monopole or tubular towers associated with more avian fatalities than did lattice or vertical-axis towers. Tubular towers did not reduce mortality over lattice towers, but rather appeared to increase mortality. It was said that it was likely due to the association of tubular towers with longer blades, slower rotations and the illusion of safety created by the "greater windows of time" between blades presented to birds. It appeared that within the ranges of turbine and tower attributes, the taller towers

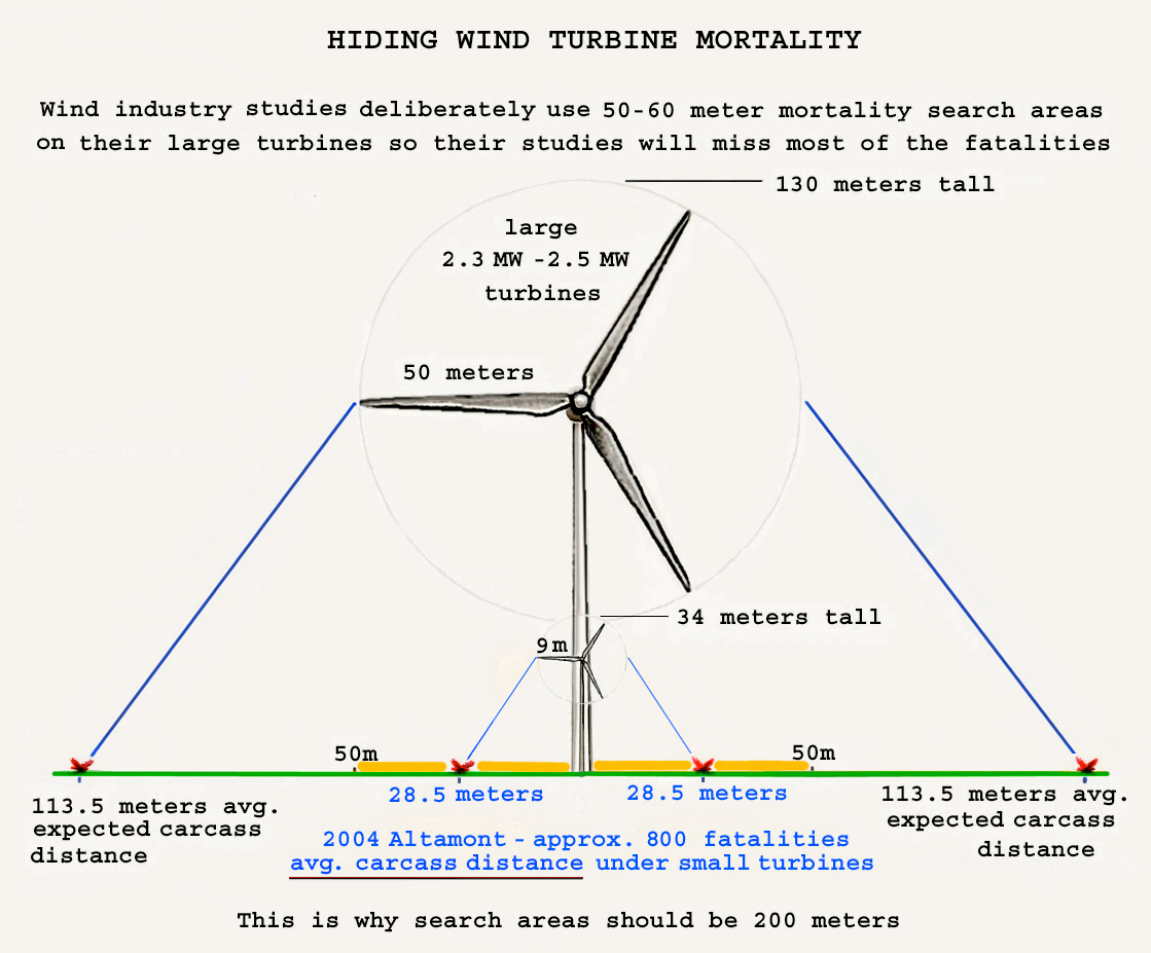
with the slower-moving blades, and the longer time spans with which birds have to fly through the rotor plane, increased the vulnerability of birds in the APWRA.

As it turns out these more dangerous turbine attributes noted years ago to be more dangerous for birds and raptors, accurately describe the wind industry's larger turbines in use today. It also describes the turbines that are being used for the Repowering of Altamont.

This report also looked at the placement of carcasses in relation to turbine types. It was documented that the larger turbines, the further away large carcasses were to be found from turbine towers. On the largest turbine in Altamont carcasses were found an average 75 meters from the KVS-33 wind turbine but the sample size was far too small to be reliable. But by looking over the data in the report, I was able to determine that large and small bodied carcasses were found on an average of 28.5 meters from 100Kw turbines on towers 24.6 meters high. These turbines also had an average blade length of about 9 meters. This distance was determined from a sample size of about 800 carcasses found around turbines.

It is not a difficult principle to understand that taller turbines with much longer blades and faster blade tip speeds are going to launch birds hit by turbine blades much further. Blade tip speed, height of blades, and point of impact are the key principles involved. To help people fully understand the influence a larger turbine has on carcasses distance I created an image with a 100 Kw turbine drawn to scale along with a 2.5 MW (**See Image**). If a 100 Kw turbine throws birds hit by turbine blades an **average** of 28.5 meters then a larger turbine with 25 times the rotor sweep will launch birds hit by blades much further. When using turbine height and blade length and the same angle to the

ground produces an **average** carcass distance of 113.5 meters.



The 113.5 meter carcass distance I listed on the bigger turbines could even be further for two reasons: (1) the blades tip speeds are about 40-50 mph faster on the industry's new larger turbines and (2) The blades on the 2.3 MW-2.5 MW turbines are not as sharp on the edges, so bodies upon impact will be less likely to be cut in half. This will add to the energy absorbed by the bodies of birds and bats upon impact, and probably increase distance.

Carcass distance was a very important factor in the 1998-2003 bird mortality studies because with only a 50 meter search radius, it as noted that searches were still missing a substantial number of fatalities in their searches. Missing carcasses in searches was the reason that the 2004 report suggested that mortality search areas or the search radius from towers needed to be expanded in relation to the size of the turbines being surveyed. A with a minimum of 70 meters was suggested, for even the shortest of turbines currently in operation.

But this was not really new information. Even in the late 1980's researchers were aware of carcass distance when looking for bodies. They used a 100 foot search radius on the

smallest 40-65 Kw turbines and a 200 foot (63 meter) search radius for the larger turbines.

Recently a new study or report was released from the APWRA. Search areas for the latest Altamont studies 2005-2010 still used a 50 meters search radius and conducted searches with longer than 30 day intervals. There were many other problems as well.

Problems with the latest Altamont Study- The latest Nov 2012 report from the APRWA was based upon mortality studies conducted from 2005-2010. Though similar in design the results from latest study look very different than the report released in 2004. When comparing these two lengthy studies it can be seen that there are dramatic contrasts in both the number of carcasses found and the estimated annual mortality. The earlier study collected fewer bodies and concluded with much higher mortality estimates. The 2005-2010 study found far more carcasses around their turbines while concluding that mortality at the APWRA had declined substantially.

I have put together a chart with some of the raw figures from the two studies. As it can be seen from the totals, researchers collected nearly 3 times the number of bodies from around turbines. Disproportionately high increases in carcasses totals can be seen across the entire mortality list from the 2005-2010 study.

APWRA mortality comparisons for the 1998-2003 and 2005-2010 study periods

Focal Species Mortality *	Total number carcasses located		Unadjusted mortality/MW/year		Adjusted mortality/MW/year	
	1998-2003	2005-2010	1998-2003	2005-2010	1998-2003	2005-2010
Golden eagle *	54	105	0.0380 - 0.1391	0.203	116.5	52.6
Red-tailed hawk	217	394	0.2953 - 0.2490	0.770	300.4	228.8
American kestrel	59	199	0.0614 - 0.1251	0.381	333.1	253.2
Burrowing owl	70	278	0.1674 - 0.1000	0.527	380	317.2
Other species						
Barn owl	50	160	0.662-0.0292	0.213	49.0	Not given
Horned owl	18	45	0.0245-0.040	0.058	10.1	Not given
Prairie falcon	0	6	0	0.008	0	Not given
Peregrine falcon	0	2	0	0.002	0	Not given
Western meadowlark	96	524	0.2078- 0.1975	0.681	2557.4	Not given
Horned lark	23	59	0.0427- 0.000	0.076	115.2	Not given
Rock dove	196	1125	0.4999 - 0.1132	1.466	2526.8	Not given
No. Bird species found	45	75				

* Does not include 347 WRRS carcasses from 2005-2010 study period
* Does not include 21 WRRS golden eagles fatalities from monitored turbines during 2005-2010 study period
* Does not include any cripples found during 2005-2010 study period
* Does not include any carcasses found outside 50 meter search areas

Mortality at the APWRA for the Four Focal Raptor Species during the study period shows nearly 2 1/2 times as many carcasses in the raw data. The number of carcasses found in searches for other species went up even more. Barn owls carcasses found went from 50 in the 1998-2003 study up to 160 for 2005 -2010 period. Prairie falcons went from 2 to 6, rock doves from 196 up to 1125; horned larks from 23 up to 59, and meadowlark carcasses collected went from 96 up to 524 bodies in the last study. Even 2 Peregrine falcon carcasses were found.

With disproportionately high increases in carcasses totals across the entire mortality list, how is it possible that the latest study could conclude that mortality at the APWRA had improved?

Exclusionary Methods and Math- Without the use of the industry's new formula and exclusionary factors built in for estimating avian mortality rates, the latest Altamont mortality figures would look completely different. One of more noticeable factors from the study was the exclusion carcasses. The report states that **347 WRRS carcasses** from the 2005-2010 data along with an additional **21 golden eagle carcasses** excluded from mortality estimates. This is very important because I happen to know that a large number of the carcasses picked up under the WRRS program are primarily raptors. Many carcasses from the Four Focal Raptor Species were eliminated from mortality estimates. As far as I could determine no WRRS carcasses were excluded from the 1998-2003 study. But even though wind farm personnel routinely look for carcasses under wind turbines, WRRS records and bodies found outside designated search areas are considered "incidental" thay are not part mortality analysis.

I do not agree, but as the study claims, "factors associated with the adjustment of fatalities for imperfect detection make it **inappropriate** to include all fatalities documented in the APWRA in the analysis".

No mortally wounded or crippled birds **found during searches** with turbine-related injuries are used in the analysis. Even though many birds hit by turbine blades do not die immediately, these victims if still breathing, are considered mobile and are excluded.

I looked over the searcher detection and scavenger removal studies that were conducted for this study. The methods in these studies were flawed towards easier detection, lower scavenger removal rates and I could see a number of easy ways to manipulate outcomes. The outcome from these studies was used in the processing of mortality data in the latest Altamont report.

Still the latest research from Altamont says nothing about search areas and the major influence it plays on the mortality reported at wind farms. There were no adjustments in the formula for the undersized search areas even though this forgotten adjustment is known as "search area bias".

The truth is that story coming out of Altamont study would look completely different with every WRRS carcasses included, every cripple included, every incidental carcass included, with 1-2 day regular search intervals, if proper sized search areas were used , and data would automatically include all **incidental** carcasses now dismissed from the formulas. The results from the Altamont turbines would be shocking.

If this were the case the public would definitely not be reading upbeat stories in the media of mortality declines at Altamont. The media would also not be running stories that

support the industry plans for repowering all of Altamont with their deadliest turbines. turbines.

I also noted that with the latest Altamont report, turbines known to be dangerous and regions with a history high mortality were avoided. At Altamont some wind turbine locations are known to be more dangerous for golden eagles than others. This is due to, migration movements, more favorable foraging and winds. A map in the 2004 report figure 7-19 show the location of 50 eagle killing turbines in the APWRA. When looking at the latest study conducted at Altamont, I happen to noticed with the 2010 surveys an entire region with some of Altamont's deadliest turbines were avoided. It appears that the 2010 Altamont surveys avoided 34 or 35 of 50 eagle killing turbines documented in the 1998-2003 study. Whether any of this was intentional or just very poor planning I will leave for speculation.

Repowering - The APWRA mortality studies from Diablo winds and the Buena Vista turbines are really the big white elephant in the repowering equation. At this point every comparison made in favor of these turbines is meaningless until proper mortality studies are conducted. These are not only the biggest turbines in the APWRA; they have also had the smallest relative search area sizes for all the APWRA turbines ever conducted. This means mortality studies are excluding more carcasses from analysis. There is no factor in any of these studies for search areas 2.5 and 3 times too small for these turbines. This is how undersized the search areas have been for the 660 Kw Diablo winds and 1MW Buena Vista turbines. With proper search area sizes and other exclusionary factors removed, I believe the mortality estimates for these turbines would easily be the highest of all the Altamont turbines.

Though not stated in the recent Altamont study the death rate per MW for the Buena Vista turbines was the highest recorded in the APWRA for the golden eagles. The death rate for the 38 turbines was estimated at 4.6 eagles per year in 2008. I am also aware that mortality also increased for the peregrine falcon and prairie falcon because these larger turbines have killed them. Burrowing owls deaths at Buena Vista section were the lowest for the AWPRA, but they have always been in this arid region of Altamont pass.

One very interesting development did come out of the latest Altamont studies (2005-2009) and was published in September 2011. In their searches of the many turbines it was reported that over 99 percent of the fatalities were found within 125 meters of turbines. This came from their searches of between 2167 and 2633 turbines over the 2005-2009 periods. Keep in mind that the average size of these turbines was only 107 Kw.

By adjusting for turbine size and comparing expected average carcass distance of the much smaller 100Kw turbines, we can get an idea of the large expanse in which bodies can be found around wind turbines. When comparing distances with the Diablo Winds and Buena Vista Turbines, one could expect to find 99% of the carcasses within **291 and 322 meters** from the respective turbine towers. For larger turbines in the 2.5 MW class it is **497 meters**.

When looking at wind mortality studies elsewhere in North America, it goes from bad to worse because the Altamont studies are not as bad as most others. Other mortality studies like those conducted at the Wolfe Island wind project (2.3 MW turbines) and Criterion Wind Project in Maryland (2.5 MW turbines) are far worse. These studies only used search areas in the 50-60 meter range. The search areas for these huge turbines should have been 200 meters from turbines just to get to the bulk (75-85%) of the bodies. Even the nearby High Winds Project located near in Solano County with 1.8 MW turbines has grossly underreported mortality. From what I have seen it is a universal problem.

It is long overdue that people realize that no source of energy comes close to killing raptors like wind energy does. No other source of energy is picking up the bodies of rare and protected species from around their production sites on a day-to-day, year-in-year out basis. No other source energy production has a several thousand mile mortality foot print. Wind energy does.

People also need to understand that every wind industry argument presented to planners and politicians when comparing the wind energy genocide to other forms of energy production, are meaningless for one simple reason, the industry has been hiding at least 90% of their slaughter for decades.

As bad as all this is, there appears to be a little hope on the horizon.

The bird safe wind turbine- Unbeknownst to most people there is a bird safe wind turbine design being produced. It is called the FloDesign Wind turbine. The turbine is a modified propeller/turbine style turbine with an encased design that protects birds from the open blade tips of other turbines. **(See Images)**

The current FloDesign turbine is rated at 100 Kw and is about the size of the majority of turbines installed at Altamont. It is also being promoted as being more efficient at harnessing wind energy than traditional 100Kw wind turbines. Even if it were not as efficient, it would still be much better to have this turbine on Bay Area ridgelines than the thousands of killers that have been spinning for over 30 years. Altamont pass could cease being a "La Brea Tar Pit" for thousands of raptors.

When looking at this new turbine any reasonable person could immediately determine that this wind turbine design would not kill an eagle, a whooping cranes or most other bird species. This turbine will be seen as an obstacle or structure by birds and they will fly around them. Birds will also not be fooled by the temporary illusion of having open flight space, and attempt to cut through the moving blades. Soaring eagles and other raptors drifting in the wind will not be smashed out of the sky by open blades.

Imagine, Altamont pass could actually eliminate their shameful raptor mortality problem with this turbine. For this reason alone it is the only wind turbine that Alameda county and Contra Costa county should consider with the repowering of APWRA. It is the only

turbine people of the Bay Area should accept on their ridgelines.

In July 2011 FloDesign made a pitch to the Altamont Pass Wind Resource Area Scientific Review Committee. This company wanted to install several test turbines at Altamont Pass so they could prove this turbine was bird safe. There were plans to have this turbine installed by the end of 2012. For some reason this has been all been delayed. But it would seem that with an ongoing bird kill disaster at Altamont, bird that this turbine would be installed as soon as possible. At the very least one would think this turbine would be used to immediately replace the most dangerous turbines.

I also understand that a mortality study is still in the works at Altamont for this turbine. If everything goes as planned researches will study this turbine, burn through a pile of taxpayer dollars, and there will be no answers for several years.

This is why people have to start getting more involved. They can help the California Energy Commission finally resolve their unresolved environmental problem.

Altamont Pass turbines kill fewer birds.....
http://www.sfgate.com/business/article/Altamont-Pass-turbines-kill-fewer-birds-4230640.

Developing Methods To Reduce Bird Mortality In The Altamont Pass Wind Resource Area 2004-08-11
http://altamontsrc.org/alt_rl.php

ALTAMONT PASS WIND RESOURCE AREA BIRD FATALITY STUDY, BIRD YEARS 2005–2010 November 2012
http://altamontsrc.org/alt_doc/m87_draft_2010_2011_bird_year_monitoring_report.pdf

ALTAMONT PASS WIND RESOURCE AREA BIRD FATALITY STUDY, BIRD YEARS 2005–2009 September 2011
http://altamontsrc.org/alt_doc/m73_altamont_pass_wind_resource_area_bird_fatality_study_bird_years_2005_2009.

EAGLE EXPERT WARNS OF POPULATION COLLAPSE

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Comments For PROJECT SPECIFIC AVIAN AND BAT PROTECTION PLAN FOR THE TULE WIND REDUCED RIDGELINE PROJECT AND RELATED EWIIAAPAAYP RESERVATION LEASE AGREEMENT

I have read the assessments about the impacts to golden eagle by this project. They are not factual and are very misleading. The mortality impacts from this project will lead to further population declines for this
species.

WRI [Wildlife Research Institute] provided misleading information about eagle mortality at wind projects

At the 580 MW Altamont Pass, studies have shown that wind turbines kill golden eagles at rate of 0.13 - 0.2 per MW per year (Smallwood and Thelander 2004 Chapter 3 Table 3-11.). This equals 75-116 eagles being smashed out of the skies over Altamont each year. Wind turbine strikes were also shown to be the number one cause of eagle mortality.
What the public does not understand is that Altamont Pass is not unique because at every wind farm located in eagle habitat, there are the same deadly combination of circumstances, wind currents, prey species, soaring eagles, and huge blades ripping through the air hundreds of feet up. Eagles forage over hundreds and sometimes thousands of miles. For this reason wind farms have a mortality footprint that far exceeds their boundaries.
In the Altamont pass region, Grainger Hunt during his seven-year study found that in the deaths of 100 radio-tagged eagles, wind turbine blade strikes killed at least 42. They were the number one cause of Golden Eagle mortality. He also added that the actual number was higher because the blades occasionally destroyed the transmitters.
I examined the golden eagle nesting records from the Grainger Hunt Surveys (2005) near Altamont Pass and compared them to the current records of nesting golden eagles for area located in the Los Vaquerous Reservoir watershed north and northwest of Altamont pass. This land is now managed by the Contra Costa County Water District. The records show that there has been a golden eagle decline of at least 50% in nesting golden eagles since 2005. Where the there were once 8-9 nests, there are now only 4.

WRI has provided insufficient data about the status of the golden eagle in the region

In the eagle surveys around the Tule and Ocotillo this year there was only 1 nest that produced young in 2012. This is an area that represents over 1000-1200 square miles of eagle habitat or territories. San Diego County only has 4,525 square miles. Yet the media is putting out inaccurate numbers that give the appearances of there being 44-48 so called "active nests" or "nesting
territories."

I have read over a number of raptor surveys conducted recently in the Southern California region. One of the Mojave surveys was conducted by C2MHill in 2010. They found 2 active (in the true sense) raven nests, 9 red-tailed hawk nests, 3 prairie falcon nests, and 2 great horned owl nests in an area of over 600 square miles. But they also found 12 unoccupied golden eagle nests in area that they felt were at one time built by 3-4 nesting

pairs.

In 2010 the Wildlife Research Institute conducted raptor surveys over a 1500 square mile area in the Mojave. They found 34 golden eagle nests and but only one that was occupied and productive. The sum of these two surveys found 45 empty eagle nests and only 1 truly active eagle nest over a 2100 sq mile region of the Mojave.
In another 2010, 650 sq mile raptor survey (Bloom Biological) conducted north of Big Bear Lake, 8 more inactive eagle nests were found. From looking at the map of these locations the empty nests appear to represent at least 2 and possibly 4 more abandoned golden eagle territories.
In the WRI eagle surveys conducted for Tule wind project and Ocotillo wind projects a large numbers of empty nests were also found. In the 2010 WRI stated ten historic golden eagle territories were surveyed, of which six were said to be active, but of those, only three of the eagle nests were actually occupied with incubating adults. Again in 2011 WRI surveyed what they claimed to be eleven golden eagle territories, six were said to be occupied during the first round of surveys (Cane Brake, Coyote Mountains – West, Garnet Mountain, Glenn Cliff, Monument Peak, and Moreno Butte). But in the most important statistical category as it relates to eagle populations, only three of the territories were confirmed as being productive (eggs or young) during the second round of surveys (Cane Brake, Glenn Cliff, Moreno Butte).

WRI provided a meaningless analysis of regional golden eagle occupancy

The WRI surveys do not accurately discuss the dozens of abandoned nests found or give reasons for the so called active eagle territories being non productive. It is well known eagle do have alternative nest sites but in looking at the surveys it is apparent that there are large numbers of eagle territories not being occupied by adult pairs of eagles. This abandonment of territories is a clear sign of a population collapse on a large scale.
Despite the confusing descriptions for given for eagle usage by researchers, this is very clear evidence of an alarming golden eagle population decline in Southern California. The number of nesting eagles (by proper definition) is the core of the population and represents the single most important criterion for analyzing any golden eagle population.
When these surveys were conducted in2010 it was a wet year for the desert. If more adult eagles were present, they would have nested. Also as the surveys pointed out, other raptor species had no problems nesting in this habitat.
In the last 10-15 years I have noticed a disturbing trend. Wind industry biologists have began using the words "territories", "active territories" , "inactive nests", "nest territories" and "active nests" in their surveys and reports. These terms are vague, have different meanings, are misleading, and contribute to misrepresentations in population estimates. The term "active nest" when pertaining to the analysis of any nesting golden eagle population, should be used only if the nest is shown to be occupied by the presence of adult eagles, with eggs and/or dependent young in a given breeding season. A nest is not really active if it is used as a feeding platform and has newly added nesting material. These signs of use have nothing to do with an accurate analysis of the golden eagle

population because abandoned eagle nests can be and frequently are used by a variety of species. Many eagle nests are used by ravens, hawks, owls, prairie falcons and even wood rats. The use of the eagle nests by these species makes the nests "active" but it has nothing to do with nesting golden eagles.
In any wind industry generated report, survey, or study pertaining to an assessment of golden eagle population numbers, unless an eagle nest is accounted for in the context I have stated, there are no credible conclusions that can be drawn. If a golden eagle happens to be seen at a location during a field survey, it does not necessarily mean it has a territory or that it has a mate, and should never be used to exaggerate a population estimate. A single eagle traveling around California (because they do travel hundreds of miles) could be seen in ten different locations in CA and from the reports I have reviewed, then could construed to represent ten eagle
territories.
Maybe this is why WRI claims there are currently 355 golden eagle territories in the Mojave region. If so they are primarily abandoned territories.

WRI has understated the impact that the project will have on the golden eagles

For decades wind industry generated mortality studies for wind projects have been inherently flawed. The procedures for conducting these studies make them totally unreliable. Mortality studies look for birds in areas 8-10 times too small just around the turbines. However, there are many larger birds that when struck on the project site can actually travel off the site before the impacts fully set in. Some of these individuals will end up hundreds of yards outside the project area before the effects of the collision kill them and they are therefore incorrectly omitted from the mortality study. Others upon impact are hit and travel like a baseball far outside study areas. This is especially true for new generation wind turbines that reach 400 feet into the
air.
Most mortality studies have been conducted every 15 to 30 days, instead of every day, allowing significant time for scavengers to take most of these fallen birds away. Further, these surveys are done by the human eye, rather than dogs which could quickly and more accurately detect fallen birds. Finally, these studies do not include a count of the birds and bats that are permanently disabled or mortally wounded, which would show the true harm caused by these turbines. Without accurate and adequate mortality studies, the true irreparable harm to avian species caused by wind projects can never be fully identified or understood.
The true impact of wind turbines on Golden Eagles cannot be ignored. Like many other raptors, Golden Eagles prefer windy areas because it makes soaring and gliding easier. But wind energy developers are also looking for windy spots, and that puts wind turbines and raptors on a direct collision course.
The Tule ridge line project will be deadly for other reasons not discussed. Ridgeline projects are the most deadly. Diablo Winds and the unmentioned Buena Vista wind projects both located at Altamont, are ridgeline based projects. The Buena Vista project with the larger 1 MW turbines had an eagle kill rate of .143 per MW, nearly 3 times what was reported at Diablo Winds. There is also something else that WRI did not disclose, paired up Golden Eagles is brushy areas (like the conditions in the Tule ridgeline habitat)

frequently hunt in teams. One will fly low for the purpose of flushing prey, the other eagle flying higher in the sky and behind, will pick off prey that is fooled by mainly paying attention to the lower eagle. I have witnessed this ridgeline hunting behavior and it takes place primarily in the turbine sweep zone between 30 and 500 feet up.
Golden Eagles and other raptors often supplement their diet by scavenging. Wounded or freshly killed birds (or other prey) found beneath huge wind turbines will always attract Golden Eagles. One must also keep in mind that a soaring eagle is a somewhat relaxed eagle and any push or gust of wind could throw even a careful eagle into the path of a sweeping turbine blade before it can take one wing beat. These foraging and scavenging behaviors put the Golden Eagle in direct risk of collision with wind turbine blades

WRI has not addressed the cumulative impacts caused by this project.

The cumulative effects on the golden eagle from the wind industry can be seen in the severe population declines or territory abandonment I have shown to exist in Southern California.

Shawn Smallwood a researcher that that has probably spent more time than anyone studying the impacts of wind turbines on birds, had this to say in 2009 about the cumulative impacts to expect from wind energy in California as it tries to meet its 33% RPS (California's Renewables Portfolio Standard).. " As explained in CARE's comments on the Tehachapi Renewable Transmission Project EIR/EIS, the available evidence indicates that not only would wind energy generation require the development of up to 4,771 square miles to achieve the 33%(RPS)based on fatality rates from four wind resource areas in California, could cause annually fatalities of >23,000 burrowing owls, >22,000 American kestrels, nearly 9,000 red-tailed hawks, >1,500 golden eagles, nearly 64,000 raptors of all kinds, >370,000 birds of all kinds, and nearly 24,000 bats of all kinds, just by collisions alone (Fig. 1). We do not believe these fatality rates would be sustainable, and we believe the California public will not accept them." View at this ca.gov website; http://www.cpuc.ca.gov/NR/rdonlyres/89CCD6E4-01ED-4BA5-8ACC-B33A20AF949C/0/CAREResponsetoTechnicalQuestions.pdf

While I agree with Shawn Smallwood about the coming devastation to bird life from wind energy development in California, I do not believe that the wind industry mortality in California will ever reach his figures of 23,000 burrowing owls and 1500 golden eagle fatalities a year. Their populations will crash long before these numbers can be reached. As I have shown, it is already happening.

There are no contingency plans for the golden eagle if the population declines

Every nesting territory is important. I would estimate that the number of productive golden eagles nests in San Diego County is approximately 10. I believe there are NO active and productive golden eagle nests remaining in Imperial County. I also believe that by analyzing all the golden eagle surveys that have been conducted to date, it is safe to

assume that there are no more than 25 productive golden eagle nests left in the California Mojave region. This is a huge area that represents 20-25 percent of the state.
As I have pointed out, mortality studies conducted by the wind industry are seriously flawed. Every cumulative impact study I have looked pertaining to the wind industry is unreliable because they have all been generated from the years of flawed data taken from biased and flawed mortality studies. Therefore how many eagles that are killed by these turbines will be nearly impossible to determine but certainly more than what has been presented.
In the Table 6-1 Summary of Advanced Conservation Practices, there really needs to be only one reasonable step in the conservation plan. That being, if the golden eagle population is reduced in the 1000-1200 square mile area of the Tule and Ocotillo wind project sites; there should be a complete curtailment of turbine operations.
In Southern California where there are many installed wind energy projects already located in eagle habitat that an eagle doesn't have to fly far before it is in great danger. This project will add one more deadly stop-over for the population.
Wind energy has been a disaster for the golden eagle. The negative footprint from wind energy projects has created ecological sinks for migrating and regional bird populations. The decades of killing of so many golden eagles by the wind industry is having a profound negative impact. The proof lies in Southern CA where there is evidence of a golden eagle population decline of 80-90
percent.

For the many reasons I have given, new credible golden eagle surveys and assessments should be conducted before one more wind turbine is built in this eagle habitat.

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Jim Wiegand is an independent wildlife expert with decades of field observations and analytical work. He is vice president of the US region of Save the Eagles International, an organization devoted to researching, protecting and preserving avian species threatened by human encroachment and development.

Thank you for considering these comments.
Sincerely yours,

Jim Wiegand